

CLAIMS:

1. A distributed systems architecture comprising:
 - at least one device capable of providing at least one service available from a services host, the device including at least one device-specific provider application program interface and having device-specific status information;
 - at least one services layer; and
 - at least one device-independent runtime environment comprising:
 - at least one services environment in which the at least one service actually runs;
 - at least one common information management application program interface;
 - at least one device model agent; and
 - at least one common provider application program interface.
2. The architecture of claim 1 wherein the at least one services layer comprises at least one service made available to the at least one device.
3. The architecture of claim 1 wherein the at least one device-independent runtime environment is deployed in a marking device, the marking device being one of the at least one device.
4. The architecture of claim 1 wherein the at least one device-independent runtime environment is deployed in a server connected to a marking device, the marking device being one of the at least one device.

5. The architecture of claim 4 wherein the server hosts an application whose primary function is not related to the device-independent runtime environment, but which hosts the device-independent runtime environment.

6. The architecture of claim 1 wherein the at least one services environment and the services layer reside on a server connected to a marking device, the marking device being one of the at least one device, the server hosting an application whose primary function is not related to the services layer and environment, but which hosts them.

7. The architecture of claim 1 wherein the device model agent, the at least one services environment, and the services layer reside on a server connected to a marking device, the marking device being one of the at least one device, the server hosting an application whose primary function is not related to the device model agent and the services layer and environment, but which hosts them.

8. A method of providing device-independent services comprising:

providing a common device interface;

providing a common information model;

integrating services in a device using the common device interface and information model; and

hiding device-specific differences behind the common device interface.

9. The method of claim 8 wherein providing a common device interface comprises employing distributed model task force common information model with predetermined extensions for respective services.

10. The method of claim 9 wherein providing a common information model comprises basing the distributed model task force common information model with predetermined extensions enhancing compatibility between devices and respective services.

11. A method of providing a service platform comprising:

providing an access module

allowing services to use embedded computational power, data, and functions of a device via the access module; and

deploying the access module in a common fashion.

12. The method of claim 11 further comprising accepting newly deployed services asynchronously with software releases for a hosting platform.

13. The method of claim 11 further comprising embedding the service platform in a host platform.

14. The method of claim 11 further comprising deploying the service platform in an add-on component to a host device.

15. The method of claim 14 further comprising connecting the add-on component to the host device via at least two interfaces.

16. The method of claim 14 further comprising connecting the add-on component to a network, thus providing the host device with the capability to participate in device services.

17. The method of claim 14 further comprising providing all network connectivity of the host device through the add-on component.

18. The method of claim 11 further comprising employing at least one application located in a user environment as a services proxy between at least one device and a services host.

19. The method of claim 18 wherein employing comprises sending data from the at least device to the services proxy in a first protocol and sending the data from the services proxy to the services host in a second protocol.

20. The method of claim 19 wherein the first protocol is SNMP.

21. The method of claim 19 wherein the first protocol is a wireless communications protocol.

22. The method of claim 19 further comprising managing device variations at a services host using a provisioning system for device-based services.

23. The method of claim 19 further comprising consolidating services management to a server in the user environment.

24. The method of claim 19 further comprising providing a UI with which a user can manage services.

25. A device model agent that provides an environment in which services can run substantially independent of a device for which the services are intended to provide functionality while providing access to the device, the device model agent also communicating with at least one services host to allow automated supplies maintenance and services subscription and deployment.